

2.7.1 Physical Coalescences and Qualitative Coalescence Contrasted

Let us inquire into the nature of total mixture between bodies. If we mix one body together with another, what is the nature of the resulting mixture?

Some thinkers differ on their explanation for how two bodies could mix. Some argue that both bodies completely penetrate into each other reciprocally. Alternatively, it is possible that one body completely penetrates into the other, while the other body merely receives it. Ultimately, this distinction is inconsequential to our original inquiry. The ultimate question is whether or not two bodies can be completely coalesced together such that they become one.

For this topic, we do not need to discuss the view that bodies never mix completely, but merely end up in very close proximity to one another. In their view, each small part of a mixture of two bodies remains distinct as a piece of the unmixed body it came from. The pieces within the mixture never homogenize and become one. Proponents of this theory (such as Anaxagoras and Democritus) have nothing to say regarding the nature of coalescence, so their position is irrelevant to a discussion of the nature of coalescence.

For those who argue that coalescence of bodies is possible, there are two main historic schools. The Peripatetic school (descended from Aristotle) holds the position that coalescence only happens in terms of Quality. To them, the individual material components of the mixture remain distinct and separate, but the mixture itself takes on a unique Quality which gets distributed homogeneously throughout the Matter of the mixture. This position is argued for by attacking the proposition that both bodies completely penetrate into each other reciprocally. The Peripatetics argue that both bodies cannot completely penetrate into each other. They argue that this would require every piece of both bodies to endlessly be whittled into smaller pieces in order to fill the ever shrinking gaps between them. Since a smaller division is always possible, there is always a smaller gap to be filled, and there is no marked point at which we could say that the pieces of the bodies are small enough to be considered as coalesced. This argument is confirmed by mixing two substances together and noticing the amount of space they occupy. If two bodies of the same Magnitude could completely penetrate into each other, their mixture would only be the Magnitude of one of the original bodies. A liter of dirt mixed with a liter of sand would result in one liter of mixed sand and dirt. Of course, the opposite is true. The Magnitude of a mixture of two bodies is the sum of the Magnitudes of its components. A liter of dirt mixed with a liter of sand produces two liters of the mixture. What about specific cases where a mixture of two substances seems to result in a Magnitude that is the same as one of the original bodies? For example, consider pouring liquid into a container of small stones. The resulting liquid could fill the container and thus the total Magnitude of the Mixture of liquid and rocks ends up the same as the Magnitude of the container. The Peripatetics will respond by saying that the liquid has merely displaced the air in the container, and that this does not really represent bodies completely penetrating into each other reciprocally. The Peripatetics further argue that, when mixing bodies of different Magnitude, there would be insufficient Matter in the body of smaller Magnitude to completely receive the body of the larger Magnitude. The Peripatetic have many other arguments in this line of thinking.

The Stoics, on the other hand, assert that bodies which make up a coalesced mixture completely penetrate into each other reciprocally. They base this view on the argument that such a mixture does not require an infinite whittling away as is denounced by the Peripatetics. For example, they argue that sweat leaves the body of an animal without dividing it to the point that it is destroyed, and without

drilling large holes through it. A counterargument might be that this is a special case, and that the nature of skin and sweat have been designed to allow sweat to pass through it without destruction. The Stoics will respond that there are similar cases which imply that this phenomenon is a universal fact of physical reality as opposed to a special case of things designed with each other in mind. For example, thin sheets of ivory permit thin liquids (such as thin oatmeal) to pass through them in a way that is reminiscent of an animal sweating.

The Stoic position produces many issues. How can one body pass through another without either dividing it or destroying part of it (such as drilling holes through it)? If the division or destruction is thorough enough, it must destroy the entire object. The Stoics argue that bodies may mix together with the resultant Magnitude being less than the sum of the Magnitudes of each of the mixed bodies. Yet they have no answer to the proposition that such mixtures are explained by the displacement of air rather than a true coalesced mixture of the bodies themselves.

The Stoics will contend that they can account for why the Magnitude of a mixture is sometimes greater than the Magnitudes of either of the bodies which were mixed together. They will say that every body implies a Magnitude in addition to its other Qualities. Just as these other Qualities are not destroyed in the mixture, each body's Quality of Magnitude is not destroyed either. Thus, these Qualities of Magnitude combine to create a new Quality of Magnitude in the resulting mixture. The Peripatetics can respond that the Stoics have mirrored their own position if they mean that the Material substance of each mixed body combines in terms of physical proximity, with the Qualities (including Magnitude) of the resultant mixture coalesce. On the other hand, if the Stoics mean to say that Material substance coalesces as well, then they would be in disagreement. To the Peripatetics, such a coalescence implies that the boundary lines between the parts of the two bodies which are mixed become superimposed. This would not result in an increase in Magnitude in the mixture, as you will end up with the parts of both bodies occupying the same space. As an allegory, drawing the same line over an existing line does not increase the size of the line. The Peripatetics will argue that in reality, the physical substances remain distinct. This allows their boundary lines to rebuff each other. Thus, as the bodies are mixed together, each piece retains the area of its Magnitude and they do not superimpose. This causes the overall Magnitude of the mixture to increase.

In the case where a smaller body is mixed together with a larger one, the Peripatetics will argue that it is impossible for all parts of the large body to find a place to permeate reciprocally within the smaller body. They will say that there isn't enough room in the small body for the large body, and there isn't enough of the small body to occupy the entirety of the larger body. In the event that the mixture is not complete, one might argue that the smaller body only coalesces with a proportionally sized part of the larger body. Yet where complete mixing has taken place, this problem is still applicable. If the Stoics argue that the smaller body expands to accommodate the larger body, they face a big problem. They would have to account for the source of the Material substance to which is necessary for the expansion. For example, the Peripatetics would explain a small stone filling in part of a container by noting that the remaining Magnitude of the container which is not derived from the stone comes from the addition of air.

2.7.2 Absorption and Evaporation

What is occurring when water turn into air (i.e. it evaporates)? This question demands examination, as it is a peculiarity that the air will possess a larger Magnitude than the water which it came from. We will move beyond the Peripatetic and Stoic explanations, as we have sufficiently described them and their various arguments. In the interest of answering these more difficult questions, we must deduce which

position is on the side of truth. If necessary, we may need to look at a third option to explain the observable phenomena.

When water flows through a substance, such as wool, how can we explain the wetness that remains in the wool?

The Stoics say that the entire body of the water flows through the wool. This cannot be the case, because if the water has flowed all the way through the wool, then there would be no water left to facilitate the wetness of the wool. It cannot merely be that the water is nestled in between the gaps of the wool, since the wool gets soaked through and become wet in every place. It cannot be that the Quality of Wetness remains in the wool after the water has left it completely. The Quality of Wetness cannot be imparted to the wool if the water where this Quality comes from is not in contact with it. Further, when the wool is wet, its Magnitude increases. It cannot be that the wool merely transmutes the water to an increase in Magnitude. If the wool's Magnitude has increase, so has its Mass. The Mass must then come from the Water, indicating that the Water and the Wool remain distinct and present in the wet wool. Some might object and argue that, just as bodies impart other Qualities onto one another, they may impart Magnitude onto each other as well. This confusion arises from a misunderstanding of the nature of how Qualities mingle. When two objects mingle, they do not merely take on the Qualities of each other. Rather, each Quality mixes with all of the others to form new Qualities. These new Qualities are distinct from the Qualities each body originally possessed, often resulting in diluted and weaker new Qualities. Yet when Magnitudes combine, they do not dilute one another. They both remain entirely, and the resulting Magnitude must be the sum of the Magnitudes of the original bodies. Thus, because the Mass of wool increases when wet, some of the water remains, and water does not entirely flow through wool when they come into contact.

The Peripatetic's say that bodies penetrate into each other by dividing them. To them, the water would divide the wool and penetrate into it. Yet how does this actually happen? Wool does not readily appear to be divided by water when wet. It is more reasonable to say that Qualities penetrate into bodies without dividing them. This is because Qualities are incorporeal (i.e. they are expressions of Form). Quality is in of itself without a body, and Matter is in of itself without a body (see note on Ennead Two, Fourth Tractate). Consequently, there is nothing unreasonable about the proposition that the Qualities penetrate into bodies without dividing them along with the Matter which expresses them. Some bodies possess the Quality of being Solid, and so they forbid other bodies from penetrating into them. Perhaps the Density of Solid objects comes from a particular combination of Qualities in Matter. Perhaps the Density is a Quality in of itself, similar to how Corporeality is. In either case, it is not any Qualities which prevent penetration, but rather specific Qualities. Thus, Matter itself is not limited in its ability to penetrate bodies unless it possesses a specific Quality (or Qualities) which produce this limitation. This is especially true for Matter which does not possess any Magnitude of its own (except for Matter which specifically rejects Magnitude for some reason). Thus, the Peripatetic solution can be discarded. Now we can move on from this particular topic with this new understanding in mind.

2.7.3 The Nature of Corporeality

Since we brought up Corporeality (i.e. possessing a body) in the last section, we should investigate its nature. Is Corporeality a composite consequence of the presence of several Qualities, or is it the manifestation of a single Principle?

If a body is the result of a composite of several Qualities manifest in Matter, then Corporeality is also a composite of several Qualities manifest in Matter. If Corporeality is a single Principle which produces a

body when manifest into Matter, then this Principle must encapsulate all of the Qualities we associate with bodies. For this reason, the distinction between the two is unnecessary. A body can always possess a certain set of Qualities, and these Qualities can in turn be dictated by an Intellectual Principle

If this Principle is more than just a description, it must define the Essence of a Being. In this case it will not have matter as a component, but rather will be the Intellectual Principle which is expressed in Matter. The expression of the Principle would then result in a body. In this case, the body would be a combination of Matter and the immaterial Ideal Form of Corporeality. The Ideal Form will itself be completely Ideal (i.e. Intellectual) and immaterial, even though Corporeality it is eternally associated with Matter by its nature.

We should be careful not to make a mistake here. The Intellectual Principle of a Body is not the same as the capacity of Intellect which an Animated Body may possess. The former is the Ideal Form which defines a Body, the latter is the capability to contemplate things Intellectually (i.e. Ideal things).